APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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ERICSSON INC.
6300 LEGACY DRIVE
M/S EVR 1-C-11
PLANO, TX 75024

EXAMINER
JAMA, ISAAK R

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/596,779	HAGEMAN, HALBE
	Examiner	Art Unit	
	ISAAK R. JAMA	2617	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 April 2009</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-24</u> is/are pending in the application.

    4a) Of the above claim(s) <u>17 and 18</u> is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-16 and 19-24</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
         application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Status of claims

1.   Claims 1-24 are pending.

2.   Claims 1 and 16 are amended.

3.   Claims 17 and 18 are cancelled.

4.   Claims 19-24 are added.

Response to Arguments

5.   Applicant's arguments with respect to claims 1-16 have been considered but are

moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

6.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

7.   Claim1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete

for omitting essential structural cooperative relationships of elements, such omission

amounting to a gap between the necessary structural connections. See MPEP

§ 2172.01. The omitted structural cooperative relationships are: Claim 1 recites

"......said input lines and output lines being connectable to predetermined resources

and said nodes being arranged to perform a *mathematical* on an incoming signal on the

input lines" rendering the claim disconnected.

Drawings

8.   The drawings are objected to because the shading makes the labels in the

drawings difficult to read. Corrected drawing sheets in compliance with 37 CFR

1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10.   Claims 1-8, 10, 12-16, 19, 20 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 5,790,817 (Asghar) in view of U.S. Patent Number 6,345,188 (Keskitalo et al.).

11.   Regarding claims 1 and 16, Asghar discloses a radio base station **[Title]**

comprising: a monitor **[Figure 3, # 250]**, memory **[Figure 3, # 202]**, and one or more

resources **[Figure 3, #s 230, 232 i.e. A/D and D/A]**, said memory being connected to

the monitor and arranged for storing tasks and data **[Figure 4, Step 402]**, each of said

resources being connected to the monitor and arranged for at least one of performing a

function and executing a program **[Column 3, lines 42-47]**, at least one analog signal

manifold comprising input lines, output lines, and nodes for making connections

between input and output lines, said input lines and output lines being connectable to

predetermined resources **[Column 8, lines 46-51]**, and said nodes being arranged to

perform a mathematic operation on an incoming signal on the input lines **[Column 12,**

lines 26-49; i.e. DSP architectural enhancements include using a register file to

separate dual memories from functional units allows parallel operation of

functional units including pipelining arithmetic logic unit (ALU)]. But Asghar does

not specifically teach at least one analog signal manifold comprising input lines, output

lines, and nodes for making connections between input and output lines, said input lines

and output lines being connectable to predetermined resources, and said nodes being

arranged to perform a mathematic operation on an incoming signal on the input lines.

Keskitalo teaches an apparatus and method of steering a signal from a base station

[Abstract], whereby at least one RX matrix 706, which performs phasing on the analog

signal received by the antenna elements in such a way that the matrix output 708

comprises K signal outputs each of which corresponds to a signal received by an

antenna beam pointing in a predetermined signal incoming direction. The matrix can be

implemented by means of prior art arrangements, such as a Butler matrix that is realized with passive 90° hybrids and phase shifters **[Figure 7, #s 706, RX Matrix, and 707, TX Matrix, column 15, lines 49-57]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the RX or TX matrix elements of Keskitalo into the Communications architecture of Asghar in order to combine the outputs from an array of radio antennas to provide a number of simultaneous signals.

12.   Regarding claim 2, Asghar discloses resources that are arranged to execute a program are also arranged to generate trigger signals and send them to the monitor, said monitor being arranged to receive said trigger signals, to read one or more tasks related to said trigger signals from said memory, to check whether resources required for performing said task are available and to send commands to selected resources specifying the task to be performed **[Column 8, lines 46-60; i.e. A/D conversion logic receives analog signals and provides corresponding digital signals to a DSP, and a D/A conversion logic receives digital signals from the DSP and provides corresponding analog signals output from the communication device]**.

13.   Regarding claims 3 and 19, Asghar discloses connections between said memory and said monitor, and connections between said resources and said monitor are implemented by means of a bus **[Figure 3, # 214]**.

14.   Regarding claim 4, Asghar discloses resources are arranged for mutual communication via said bus **[Figure 3, # 214]**.

15.   Regarding claim 5, Asghar discloses wherein using the bus is based on a
datagram principle **[column 2, lines 54-67; i.e. two or more DSPs are coupled
through dedicated address and data buses]**.

16.   Regarding claim 6, Asghar discloses wherein said memory comprises a task
memory and a data memory **[column 8, lines 61-64; i.e. code which is synonymous
with task and data memory]**.

17.   Regarding claims 7 and 20, Asghar discloses wherein said monitor comprises a
state machine sequencer for handling several state machines in parallel **[Figure 3, #
222, columns 5 & 6, lines 66-67 and 1-17]**.

18.   Regarding claim 8, Asghar discloses wherein said memory comprises a ROM
portion **[Figure 3, # 203; i.e. non-volatile memory]** and a RAM portion **[Figure 3, #
202, i.e. system memory]**, said ROM portion storing state machine definitions for said
state machine sequencer, task definitions and default structures **[Columns 8 & 9, lines
65-67 and 1-11]**, said RAM portion storing dynamic data **[Column 9, lines 29-32]**.

19.   Regarding claim 12, Asghar discloses wherein said one or more resources
comprises at least one of: a transmitter, a receiver, a digital analog converter, an analog
digital converter, a control unit, and a digital signal processor **[Figure 2, #s 212a, 212b,
232, 222, 212a and b]**.

20.   Regarding claims 10 and 22, Asghar discloses wherein said monitor comprises
an executor arranged for: sending commands to resources; sending task block requests
to memory; receiving status information from resources; and receiving task blocks from
memory **[Figure 4, column 10, lines 26-33]**.

21.   Regarding claim 13, Asghar discloses wherein said one or more resources
comprise at least one digital signal processor storing an executable image for
performing a program **[Figure 5, # 212]**.

22.   Regarding claims 14 and 23, Keskitalo further discloses that one or more
resources comprise a plurality of transmitters **[Figure 7, #s 764, 766, 768]**, a plurality of
receivers **[Figure 7, #s 712, 714, 716]**, a plurality of digital analog converters **[Figure 7,
#s 758, 760, 762]**, and a plurality of analog digital converters **[Figure 7, #s 718, 720,
722]** said at least one analog signal manifold being arranged for making connections
between said plurality of transmitters and said plurality of digital analog converters
[Figure 7, # 770], and for making connections between said plurality of receivers and
said plurality of analog digital converters **[Figure 7, # 706]**. Therefore, it would have
been obvious to a person of ordinary skill in the art at the time the invention was made
to include the RX matrix, TX matrix, receivers, Analog-to-digital converters, transmitters
and digital-to-analog converters of Keskitalo into the communications architecture of
Asghar in order to reduce interference and improve the connection quality.

23.   Regarding claims 15 and 24, Keskitalo further discloses wherein said mathematic
operations comprise at least one of multiplying, adding, subtracting, and one-to-one
connecting **[Column 15, lines 54-56; i.e. the matrix can be implemented by means
of prior art arrangements, such as a Butler matrix,** *a circuit implemented to combine,
i.e. add outputs from an array of antennas***]**. Therefore, it would have been obvious to a
person of ordinary skill in the art at the time the invention was made to include the RX

matrix of Keskitalo into the communications architecture of Asghar in order to provide a number of simultaneous received signals.

16.   Claims 9, 11 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 5,790,817 (Asghar) in view of U.S. patent Number 6,976,021 (Ramakrishnan).

17.   Regarding claims 9 and 21, Asghar is discussed above in relation to claims 1 and 16; but Asghar fails to specifically disclose that the RAM portion stores a resource allocation table, a data block list, and data blocks. Ramakrishnan teaches a method and system for managing a re-usable resources whereby a DRAM memory stores a hash table and active doubly linked lists that are initialized and managed via a resource allocation module **[Figure 28, column 15, lines 36-55]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the method of Ramakrishnan in the multiprocessor communication architecture Asghar in order to facilitate fast accessibility.

18.   Regarding claim 11, Asghar further discloses wherein said monitor comprises an executor arranged for: sending commands to resources; sending task block requests to memory; receiving status information from resources; receiving task blocks from memory; and maintaining said resource allocation table **[Figure 4, column 10, lines 26-33]**.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to ISAAK R. JAMA whose telephone number is (571)270-

5887. The examiner can normally be reached on 7:30 - 5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Lester G. Kincaid can be reached on (571) 272-7922. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/IRJ/

/Lester Kincaid/
Supervisory Patent Examiner, Art Unit 2617